

FIG. 4A

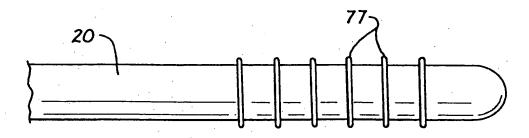


FIG. 4B



FIG. 4C

DETERMINE A PRE-SELECTED TEMPERATURE FOR A TARGET TISSUE

SELECT AN UPPER VARIANCE SET POINT

SELECT A LOWER VARIANCE SET POINT

OBTAIN A SENSED TEMPERATURE FOR THE TARGET TISSUE

PLACE A HEAT EXCHANGER CAPABLE OF EITHER HEATING OR COOLING BODY FLUID IN HEAT EXCHANGE PROXIMITY WITH BODY FLUID WHICH SUBSEQUENTLY FLOWS TO THE TARGET TISSUE

DETERMINE WHETHER THE HEAT EXCHANGER IS COOLING, HEATING, OR OFF

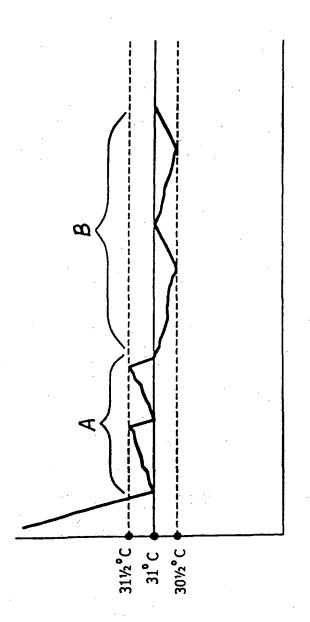
IF COOLING, COMPARE THE SENSED TEMPERATURE WITH THE PRE-SELECTED TEMPERATURE. IF THE SENSED TEMPERATURE IS GREATER THAN TO THE PRE-SELECTED TEMPERATURE, CONTINUE COOLING. RETURN TO STEP 6. IF THE SENSED TEMPERATURE IS EQUAL TO OR LESS THAN THE PRE-SELECTED TEMPERATURE, TURN THE HEAT EXCHANGER OFF. RETURN TO STEP 6.

IF THE HEAT EXCHANGER IS HEATING, COMPARE THE SENSED TEMPERATURE WITH THE PRE-SELECTED TEMPERATURE. IF THE SENSED TEMPERATURE IS LESS THAN THE PRE-SELECTED TEMPERATURE, CONTINUE HEATING. RETURN TO STEP 6. IF THE SENSED TEMPERATURE IS EQUAL TO OR GREATER THAN THE PRE-SELECTED TEMPERATURE, TURN THE HEAT EXCHANGER OFF. RETURN TO STEP 6.

IF THE HEAT EXCHANGER IS OFF, COMPARE THE SENSED TEMPERATURE WITH THE UPPER VARIANCE TEMPERATURE. IF THE SENSED TEMPERATURE IS EQUAL TO OR GREATER THAN THE UPPER VARIANCE SET POINT, BEGIN COOLING. RETURN TO STEP 6. IF THE SENSED TEMPERATURE IS EQUAL TO OR LESS THAN THE LOWER VARIANCE SET POINT, BEGIN HEATING. RETURN TO STEP 6. IF THE SENSED TEMPERATURE IS NEITHER, THE REMAIN OFF AND RETURN TO STEP 6.

FIG. 5

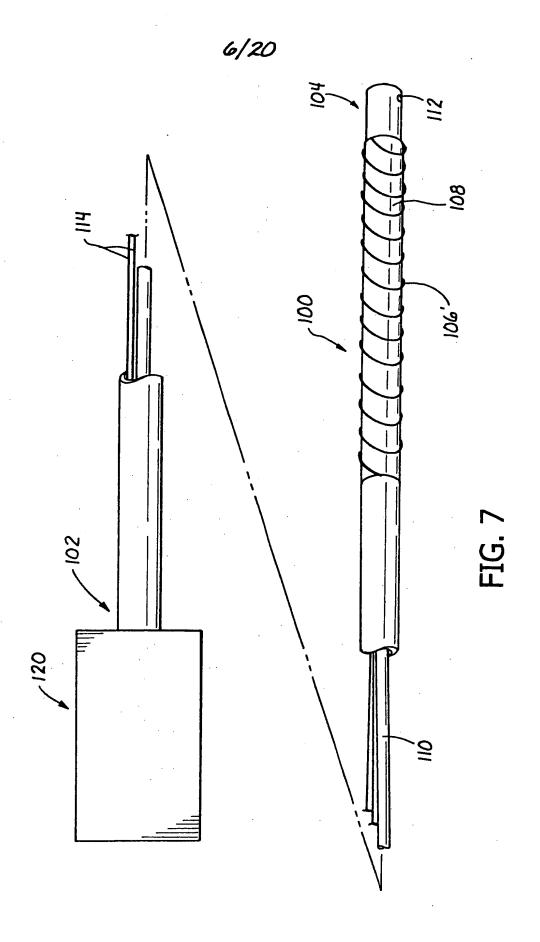


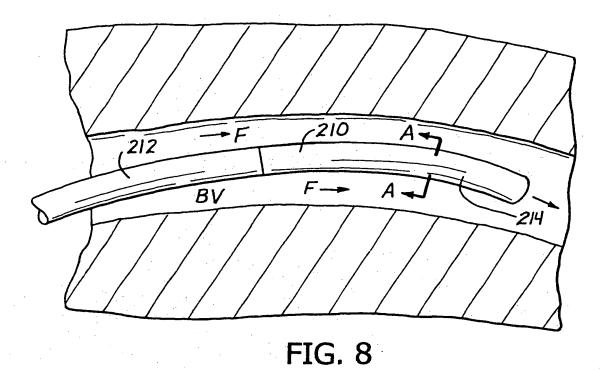


31°C = PRE-SELECTED TEMPERATURE 31½°C = UPPER VARIANCE SET POINT 31½°C = LOWER VARIANCE SET POINT

TIME

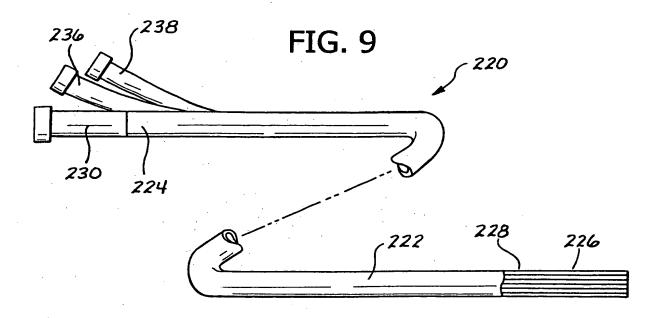
TEMPERATURE

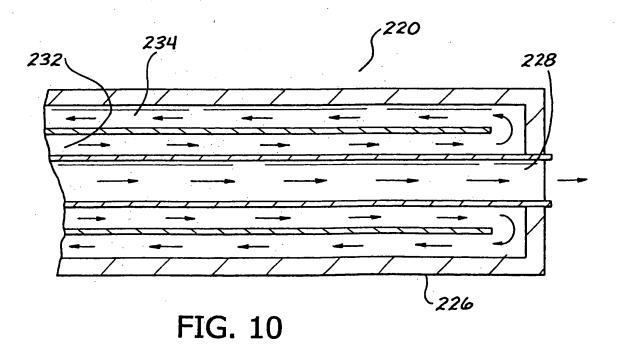


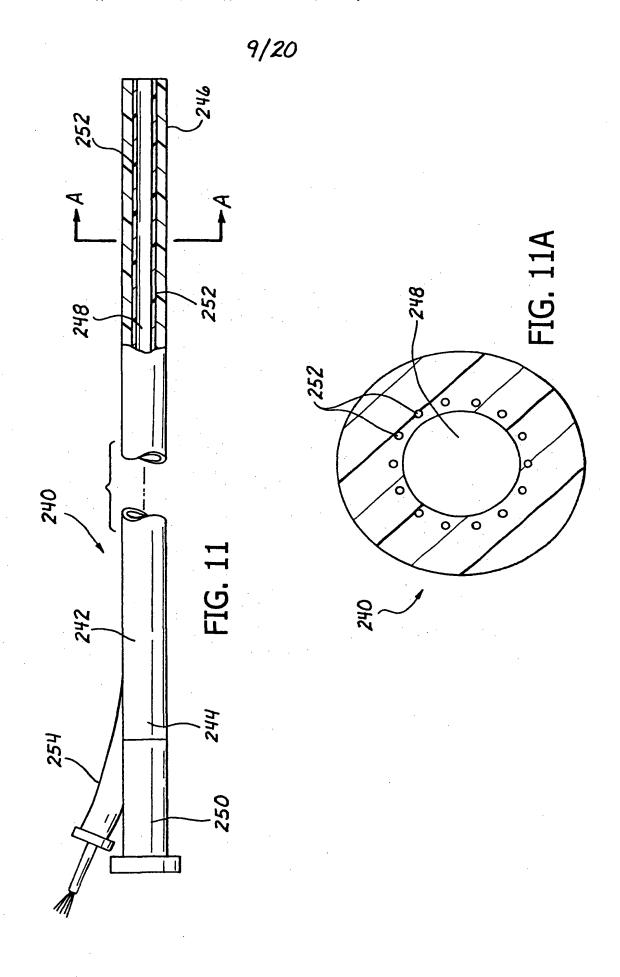


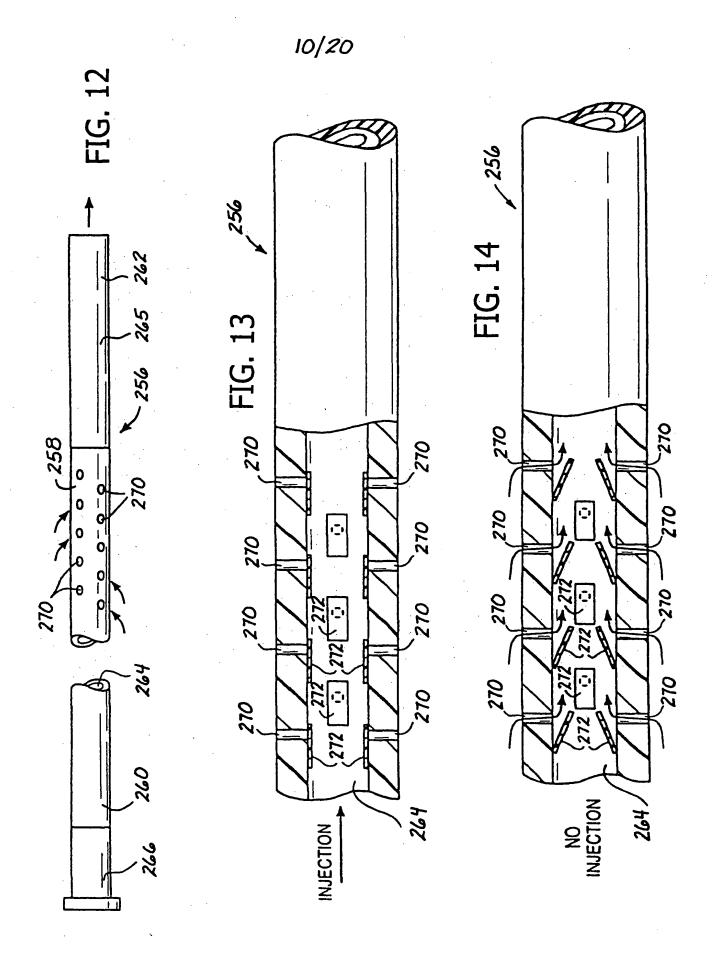
212

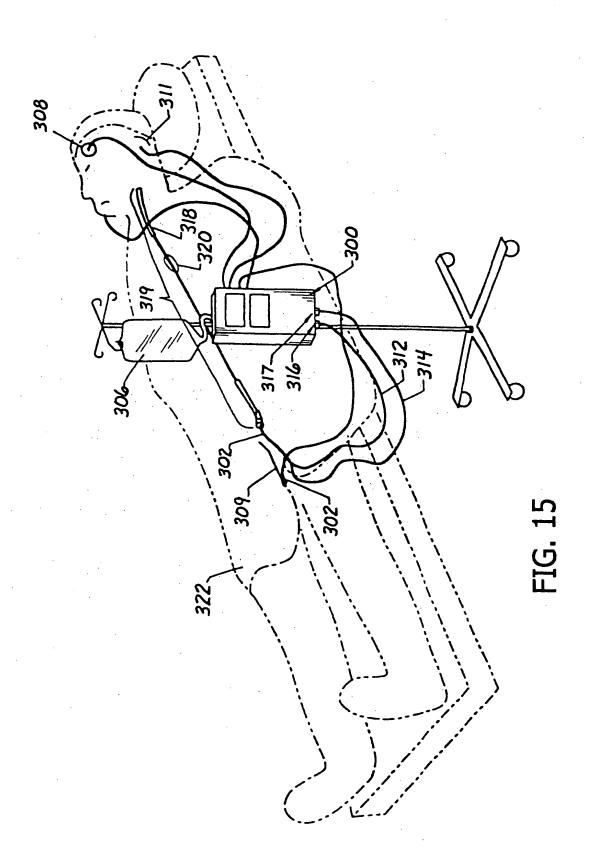
FIG. 8A

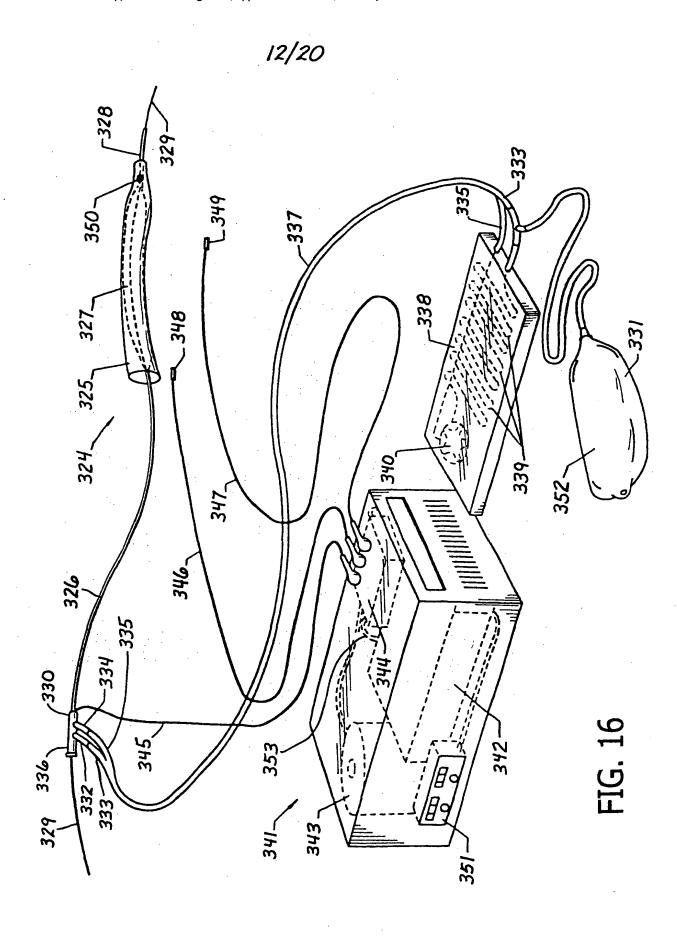


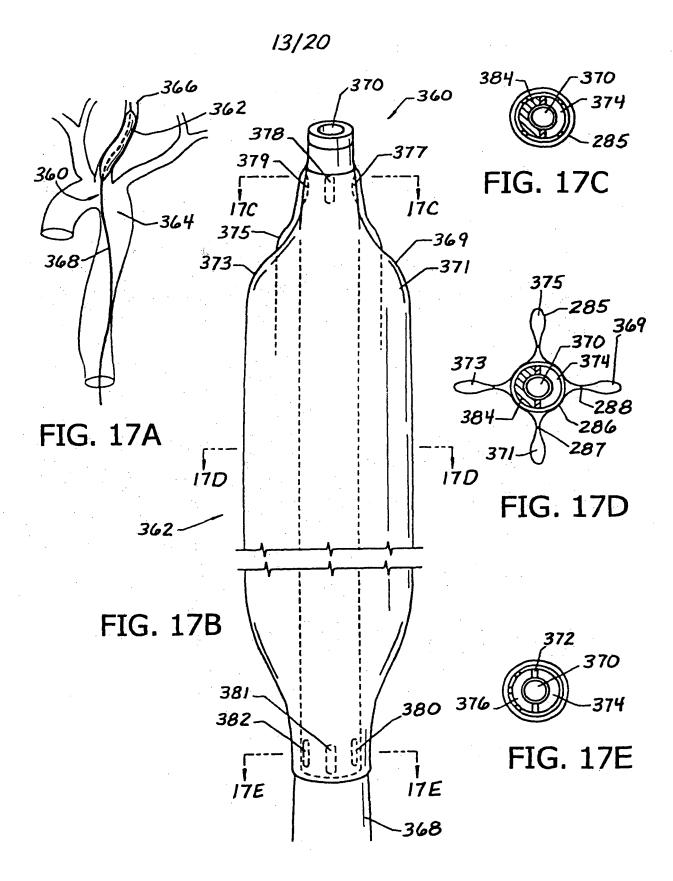


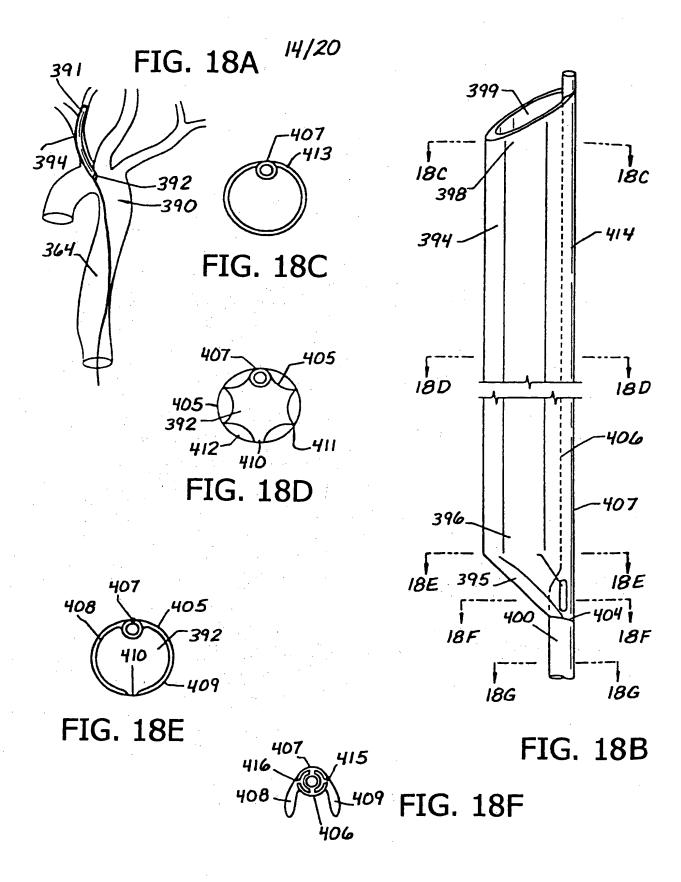


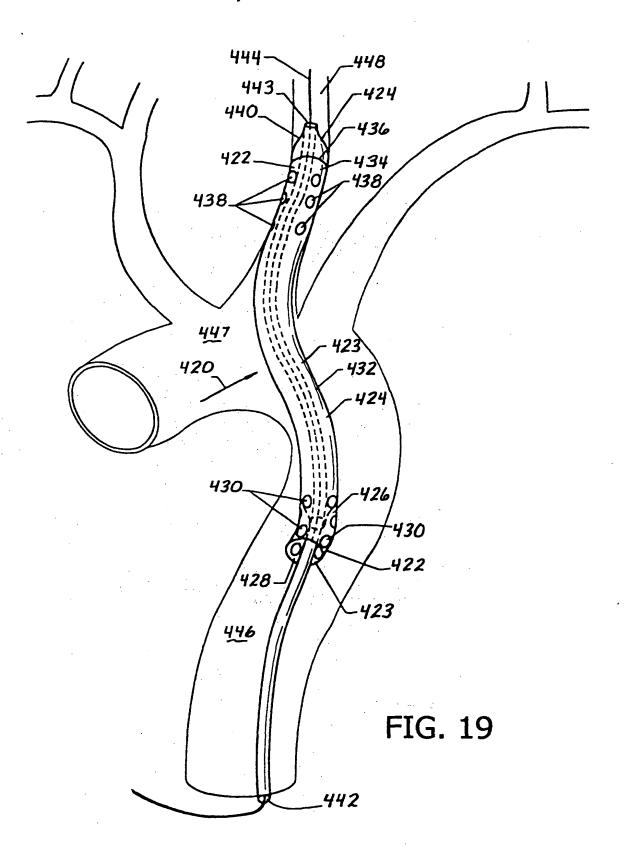




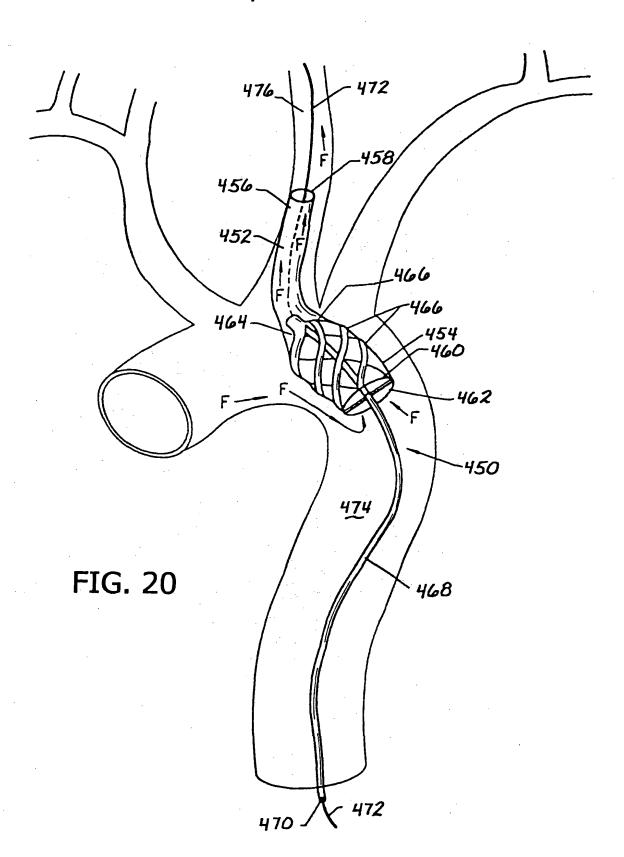


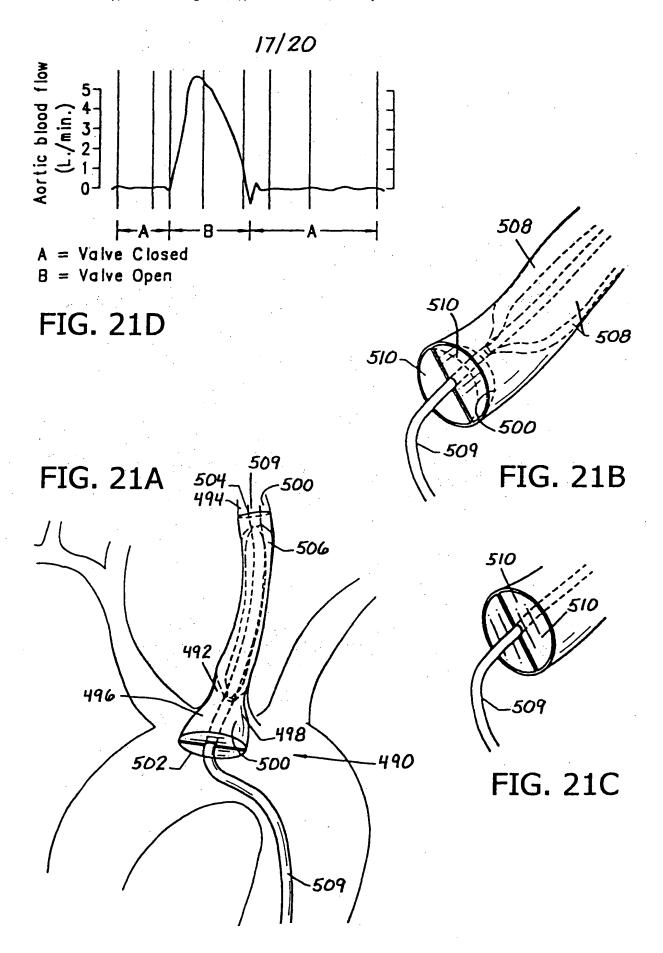






16/20





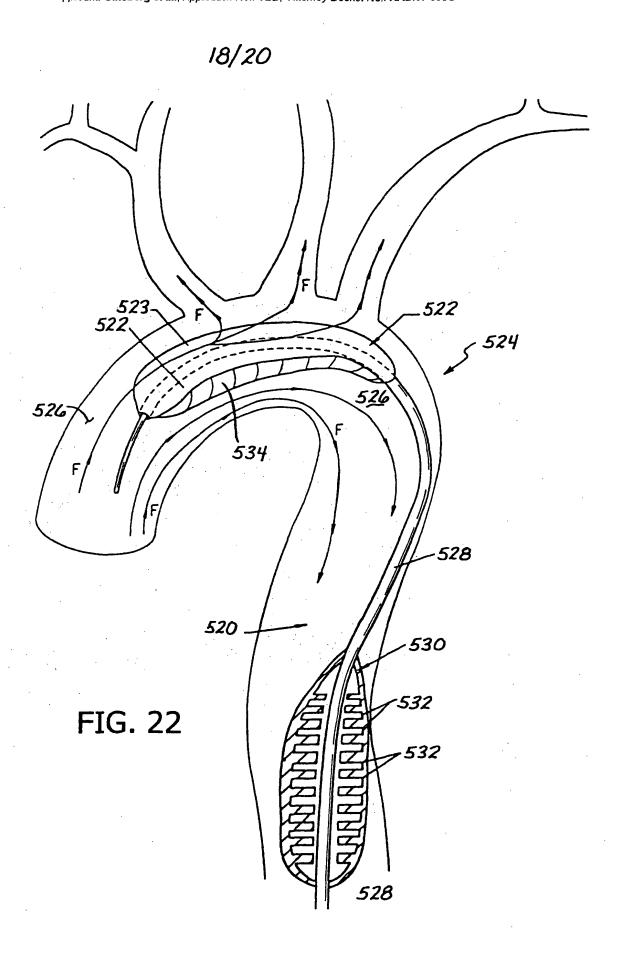


FIG. 23B

